

ABSTRACT**ANALYSIS AND CONTROL OF OPTICAL COMMUNICATIONS SYSTEMS**

5 An optical communications system has a plurality of spans between a transmitter and a receiver. The receiver has optical to electrical conversion circuitry for converting the received optical
10 signal to an electric signal, analogue to digital conversion circuitry and digital signal processing means for analysing the electrical digital signal. The digital signal processing means derives information concerning characteristics of individual spans from the electrical digital signal. This enables parameters such as per-span variations in provisioned power, local dispersion and span loss to be measured. In-service measurements of system characteristics can be used to enable optimisation of the network operation.